

0590
0124

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/983,025

DATE: 01/24/2002

TIME: 14:48:34

Input Set : A:\OXVIG1A.txt

Output Set: N:\CRF3\01242002\I983025.raw

PS

ENTERED

3 <110> APPLICANT: OXVIG, Claus
 4 OVERGAARD, Michael T.
 6 <120> TITLE OF INVENTION: PREGNANCY-ASSOCIATED PLASMA PROTEIN-A2 (PAPP-A2)
 8 <130> FILE REFERENCE: OXVIG=1A
 10 <140> CURRENT APPLICATION NUMBER: US 09/983,025
 11 <141> CURRENT FILING DATE: 2001-10-22
 13 <150> PRIOR APPLICATION NUMBER: US 60/241,840
 14 <151> PRIOR FILING DATE: 2000-10-20
 16 <150> PRIOR APPLICATION NUMBER: DK PA 2000 01571
 17 <151> PRIOR FILING DATE: 2000-10-20
 19 <160> NUMBER OF SEQ ID NOS: 25
 21 <170> SOFTWARE: PatentIn version 3.1
 23 <210> SEQ ID NO: 1
 24 <211> LENGTH: 8527
 25 <212> TYPE: DNA
 26 <213> ORGANISM: Homo sapiens
 28 <220> FEATURE:
 29 <221> NAME/KEY: CDS
 30 <222> LOCATION: (1)..(5373)
 31 <223> OTHER INFORMATION: prepro-PAPP-A2 coding sequence
 34 <220> FEATURE:
 35 <221> NAME/KEY: 3'UTR
 36 <222> LOCATION: (5377)..(8527)
 37 <223> OTHER INFORMATION:
 40 <220> FEATURE:
 41 <221> NAME/KEY: mat_peptide
 42 <222> LOCATION: (700)..()
 43 <223> OTHER INFORMATION:
 46 <220> FEATURE:
 47 <221> NAME/KEY: sig_peptide
 48 <222> LOCATION: (1)..(66)
 49 <223> OTHER INFORMATION:
 52 <220> FEATURE:
 53 <221> NAME/KEY: misc_feature
 54 <222> LOCATION: (1)..(66)
 55 <223> OTHER INFORMATION: prepro part of PAPP-A2
 58 <220> FEATURE:
 59 <221> NAME/KEY: misc_feature
 60 <222> LOCATION: (67)..(699)
 61 <223> OTHER INFORMATION: pro part of PAPP-A2
 64 <400> SEQUENCE: 1
 65 atg atg tgc tta aag atc cta aga ata agc ctg gcg att ttg gct 45
 66 Met Met Cys Leu Lys Ile Leu Arg Ile Ser Leu Ala Ile Leu Ala

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/983,025

Input Set : A:\OXVIG1A.txt
Output Set: N:\CRF3\01242002\I983025.raw

| Line | Sequence | Score |
|------|-----------------|-------|
| 67 | ggg tgg gca ctc | -220 |
| 69 | Gly Trp Ala Leu | -225 |
| 70 | aaa tcc ttg | -230 |
| 71 | Lys Lys Ser Leu | -215 |
| 73 | gaa gga gaa cgt | -200 |
| 74 | Glu Gly Glu Arg | -185 |
| 75 | gct tct cca cag | -170 |
| 77 | Ala Ser Pro Gln | -155 |
| 78 | ggg aac tac cta | -140 |
| 79 | Gly Asn Tyr Leu | -125 |
| 81 | cat aca gga cgc | -110 |
| 82 | His Thr Gly Arg | -95 |
| 83 | ctt gtt ccc cca | -80 |
| 85 | Leu Val Pro Pro | -65 |
| 86 | gca gtt gaa gag | -50 |
| 87 | Ala Val Glu Glu | -35 |
| 89 | ggg caa tct gag | -20 |
| 90 | Gly Gln Ser Glu | -10 |
| 91 | aga tcc aag gag | 5 |
| 93 | Arg Ser Lys Glu | 10 |
| 94 | atg gct gcc act | 15 |
| 95 | Met Ala Ala Thr | 20 |
| 96 | aaa cca gag acc | 25 |
| 97 | Lys Pro Glu Thr | 30 |
| 98 | caa gtg tgg aag | 35 |
| 99 | Gln Val Trp Lys | 40 |
| 100 | tct tca cat ttc | 45 |
| 101 | Ser Ser His Phe | 50 |
| 102 | aaa aag agt cca | 55 |
| 103 | Lys Lys Ser Pro | 60 |
| 104 | tac cga gaa gca | 65 |
| 105 | Tyr Arg Glu Ala | 70 |
| 106 | gag acc ttt aac | 75 |
| 107 | Glu Ala Glu Thr | 80 |
| 108 | gag acc ttt aac | 85 |
| 109 | Tyr Arg Glu Thr | 90 |
| 110 | gag acc ttt aac | 95 |
| 111 | Tyr Arg Glu Thr | 100 |
| 112 | gag acc ttt aac | 105 |
| 113 | Tyr Arg Glu Thr | 110 |
| 114 | gag acc ttt aac | 115 |
| 115 | Tyr Arg Glu Thr | 120 |
| 116 | gag acc ttt aac | 125 |
| 117 | Tyr Arg Glu Thr | 130 |
| 118 | gag acc ttt aac | 135 |
| 119 | Tyr Arg Glu Thr | 140 |
| 120 | gag acc ttt aac | 145 |
| 121 | Tyr Arg Glu Thr | 150 |
| 122 | gag acc ttt aac | 155 |
| 123 | Tyr Arg Glu Thr | 160 |
| 124 | gag acc ttt aac | 165 |
| 125 | Tyr Arg Glu Thr | 170 |
| 126 | gag acc ttt aac | 175 |
| 127 | Tyr Arg Glu Thr | 180 |
| 128 | gag acc ttt aac | 185 |
| 129 | Tyr Arg Glu Thr | 190 |
| 130 | gag acc ttt aac | 195 |
| 131 | Tyr Arg Glu Thr | 200 |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/983,025

DATE: 01/24/2002
TIME: 14:48:35

Input Set : A:\OXVIG1A.txt
Output Set: N:\CRF3\01242002\I983025.raw

| | | |
|-----|---|------|
| 133 | tac ttc tct ggg agg cgg gag cgg ctg ctg ctg cgt cca gaa gtg ctg | 837 |
| 134 | Tyr Phe Ser Gly Arg Arg Glu Arg Leu Leu Leu Arg Pro Glu Val Leu | |
| 135 | | 45 |
| 137 | gct gag att ccc cgg gag gcg ttc aca gtg gaa gcc tgg gtt aaa ccg | 885 |
| 138 | Ala Glu Ile Pro Arg Glu Ala Phe Thr Val Glu Ala Trp Val Lys Pro | |
| 139 | | 60 |
| 141 | gag gga gga cag aac aac cca gcc atc atc gca ggt gtg ttt gat aac | 933 |
| 142 | Glu Gly Gly Gln Asn Asn Pro Ala Ile Ile Ala Gly Val Phe Asp Asn | |
| 143 | | 75 |
| 145 | tgc tcc cac act gtc agt gac aaa ggc tgg gcc ctg ggg atc cgc tca | 981 |
| 146 | Cys Ser His Thr Val Ser Asp Lys Gly Trp Ala Leu Gly Ile Arg Ser | |
| 147 | | 80 |
| 149 | ggg aag gac aag gga aag cgg gat gct cgc ttc ttc ttc tcc ctc tgc | 1029 |
| 150 | Gly Lys Asp Lys Gly Lys Arg Asp Ala Arg Phe Phe Phe Ser Leu Cys | |
| 151 | 95 | 105 |
| 153 | acc gac cgc gtg aag aaa gcc acc atc ttg att agc cac agt cgc tac | 1077 |
| 154 | Thr Asp Arg Val Lys Lys Ala Thr Ile Leu Ile Ser His Ser Arg Tyr | |
| 155 | | 125 |
| 157 | caa cca ggc aca tgg acc cat gtg gca gcc act tac gat gga cgg cac | 1125 |
| 158 | Gln Pro Gly Thr Trp Thr His Val Ala Ala Thr Tyr Asp Gly Arg His | |
| 159 | | 140 |
| 161 | atg gcc ctg tat gtg gat ggc act cag gtg gct agc agt cta gac cag | 1173 |
| 162 | Met Ala Leu Tyr Val Asp Gly Thr Gln Val Ala Ser Ser Leu Asp Gln | |
| 163 | | 155 |
| 165 | tct ggt ccc ctg aac agc ccc ttc atg gca tct tgc cgc tct ttg ctc | 1221 |
| 166 | Ser Gly Pro Leu Asn Ser Pro Phe Met Ala Ser Cys Arg Ser Leu Leu | |
| 167 | | 170 |
| 169 | ctg ggg gga gac agc tct gag gat ggg cac tat ttc cgt gga cac ctg | 1269 |
| 170 | Leu Gly Gly Asp Ser Ser Glu Asp Gly His Tyr Phe Arg Gly His Leu | |
| 171 | 175 | 185 |
| 173 | ggc aca ctg gtt ttc tgg tgc acc gcc ctg cca caa agc cat ttt cag | 1317 |
| 174 | Gly Thr Leu Val Phe Trp Ser Thr Ala Leu Pro Gln Ser His Phe Gln | |
| 175 | | 205 |
| 177 | cac agt tct cag cat tca agt ggg gag gag gaa gcg act gac ttg gtc | 1365 |
| 178 | His Ser Ser Gln His Ser Ser Gly Glu Glu Glu Ala Thr Asp Leu Val | |
| 179 | | 220 |
| 181 | ctg aca gcg agc ttt gag cct gtg aac aca gag tgg gtt ccc ttt aga | 1413 |
| 182 | Leu Thr Ala Ser Phe Glu Pro Val Asn Thr Glu Trp Val Pro Phe Arg | |
| 183 | | 235 |
| 185 | gat gag aag tac cca cga ctt gag gtt ctc cag ggc ttt gag cca gag | 1461 |
| 186 | Asp Glu Lys Tyr Pro Arg Leu Glu Val Leu Gln Gly Phe Glu Pro Glu | |
| 187 | | 250 |
| 189 | cct gag att ctg tgc cct ttg cag ccc cca ctc tgt ggg caa aca gtc | 1509 |
| 190 | Pro Glu Ile Leu Ser Pro Leu Gln Pro Pro Leu Cys Gly Gln Thr Val | |
| 191 | 255 | 265 |
| 193 | tgt gac aat gtg gaa ttg atc tcc cag tac aat gga tac tgg ccc ctt | 1557 |
| 194 | Cys Asp Asn Val Glu Leu Ile Ser Gln Tyr Asn Gly Tyr Trp Pro Leu | |
| 195 | | 285 |
| 197 | cgg gga gag aag gtg ata cgc tac cag gtg gtg aac atc tgt gat gat | 1605 |

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/983,025

DATE: 01/24/2002

TIME: 14:48:35

Input Set : A:\OXVIG1A.txt

Output Set: N:\CRF3\01242002\I983025.raw

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 198 | Arg | Gly | Glu | Lys | Val | Ile | Arg | Tyr | Gln | Val | Val | Asn | Ile | Cys | Asp | Asp | |
| 199 | | | | 290 | | | | | 295 | | | | | 300 | | | |
| 201 | gag | ggc | cta | aac | ccc | att | gtg | agt | gag | gag | cag | att | cgt | ctg | cag | cac | 1653 |
| 202 | Glu | Gly | Leu | Asn | Pro | Ile | Val | Ser | Glu | Glu | Gln | Ile | Arg | Leu | Gln | His | |
| 203 | | | 305 | | | | | 310 | | | | | 315 | | | | |
| 205 | gag | gca | ctg | aat | gag | gcc | ttc | agc | cgc | tac | aac | atc | agc | tgg | cag | ctg | 1701 |
| 206 | Glu | Ala | Leu | Asn | Glu | Ala | Phe | Ser | Arg | Tyr | Asn | Ile | Ser | Trp | Gln | Leu | |
| 207 | | 320 | | | | | 325 | | | | | 330 | | | | | |
| 209 | agc | gtc | cac | cag | gtc | cac | aat | tcc | acc | ctg | cga | cac | cgg | gtt | gtg | ctt | 1749 |
| 210 | Ser | Val | His | Gln | Val | His | Asn | Ser | Thr | Leu | Arg | His | Arg | Val | Val | Leu | |
| 211 | 335 | | | | | 340 | | | | | 345 | | | | | 350 | |
| 213 | gtg | aac | tgt | gag | ccc | agc | aag | att | ggc | aat | gac | cat | tgt | gac | ccc | gag | 1797 |
| 214 | Val | Asn | Cys | Glu | Pro | Ser | Lys | Ile | Gly | Asn | Asp | His | Cys | Asp | Pro | Glu | |
| 215 | | | | 355 | | | | | | 360 | | | | 365 | | | |
| 217 | tgt | gag | cac | cca | ctc | aca | ggc | tat | gat | ggg | ggt | gac | tgc | cgc | ctg | cag | 1845 |
| 218 | Cys | Glu | His | Pro | Leu | Thr | Gly | Tyr | Asp | Gly | Gly | Asp | Cys | Arg | Leu | Gln | |
| 219 | | | 370 | | | | | 375 | | | | | 380 | | | | |
| 221 | ggc | cgc | tgc | tac | tcc | tgg | aac | cgc | agg | gat | ggg | ctc | tgt | cac | gtg | gag | 1893 |
| 222 | Gly | Arg | Cys | Tyr | Ser | Trp | Asn | Arg | Arg | Asp | Gly | Leu | Cys | His | Val | Glu | |
| 223 | | | 385 | | | | 390 | | | | | 395 | | | | | |
| 225 | tgt | aac | aac | atg | ctg | aac | gac | ttt | gac | gac | gga | gac | tgc | tgc | gac | ccc | 1941 |
| 226 | Cys | Asn | Asn | Met | Leu | Asn | Asp | Phe | Asp | Asp | Gly | Asp | Cys | Cys | Asp | Pro | |
| 227 | | 400 | | | | | 405 | | | | | 410 | | | | | |
| 229 | cag | gtg | gct | gat | gtg | cgc | aag | acc | tgc | ttt | gac | cct | gac | tca | ccc | aag | 1989 |
| 230 | Gln | Val | Ala | Asp | Val | Arg | Lys | Thr | Cys | Phe | Asp | Pro | Asp | Ser | Pro | Lys | |
| 231 | 415 | | | | | 420 | | | | | 425 | | | | | 430 | |
| 233 | agg | gca | tac | atg | agt | gtg | aag | gag | ctg | aag | gag | gcc | ctg | cag | ctg | aac | 2037 |
| 234 | Arg | Ala | Tyr | Met | Ser | Val | Lys | Glu | Leu | Lys | Glu | Ala | Leu | Gln | Leu | Asn | |
| 235 | | | | 435 | | | | | | 440 | | | | 445 | | | |
| 237 | agt | act | cac | ttc | ctc | aac | atc | tac | ttt | gcc | agc | tca | gtg | cgg | gaa | gac | 2085 |
| 238 | Ser | Thr | His | Phe | Leu | Asn | Ile | Tyr | Phe | Ala | Ser | Ser | Val | Arg | Glu | Asp | |
| 239 | | | 450 | | | | | 455 | | | | | 460 | | | | |
| 241 | ctt | gca | ggt | gct | gcc | acc | tgg | cct | tgg | gac | aag | gac | gct | gtc | act | cac | 2133 |
| 242 | Leu | Ala | Gly | Ala | Ala | Thr | Trp | Pro | Trp | Asp | Lys | Asp | Ala | Val | Thr | His | |
| 243 | | | 465 | | | | 470 | | | | | 475 | | | | | |
| 245 | ctg | ggt | ggc | att | gtc | ctc | agc | cca | gca | tat | tat | ggg | atg | cct | ggc | cac | 2181 |
| 246 | Leu | Gly | Gly | Ile | Val | Leu | Ser | Pro | Ala | Tyr | Tyr | Gly | Met | Pro | Gly | His | |
| 247 | | 480 | | | | | 485 | | | | | 490 | | | | | |
| 249 | acc | gac | acc | atg | atc | cat | gaa | gtg | gga | cat | gtt | ctg | gga | ctc | tac | cat | 2229 |
| 250 | Thr | Asp | Thr | Met | Ile | His | Glu | Val | Gly | His | Val | Leu | Gly | Leu | Tyr | His | |
| 251 | 495 | | | | | 500 | | | | | 505 | | | | | 510 | |
| 253 | gtc | ttt | aaa | gga | gtc | agt | gaa | aga | gaa | tcc | tgc | aat | gac | ccc | tgc | aag | 2277 |
| 254 | Val | Phe | Lys | Gly | Val | Ser | Glu | Arg | Glu | Ser | Cys | Asn | Asp | Pro | Cys | Lys | |
| 255 | | | | 515 | | | | | | 520 | | | | 525 | | | |
| 257 | gag | aca | gtg | cca | tcc | atg | gaa | acg | gga | gac | ctc | tgt | gcc | gac | acc | gcc | 2325 |
| 258 | Glu | Thr | Val | Pro | Ser | Met | Glu | Thr | Gly | Asp | Leu | Cys | Ala | Asp | Thr | Ala | |
| 259 | | | 530 | | | | | | 535 | | | | 540 | | | | |
| 261 | ccc | act | ccc | aag | agt | gag | ctg | tgc | cgg | gaa | cca | gag | ccc | act | agt | gac | 2373 |
| 262 | Pro | Thr | Pro | Lys | Ser | Glu | Leu | Cys | Arg | Glu | Pro | Glu | Pro | Thr | Ser | Asp | |

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/983,025

DATE: 01/24/2002

TIME: 14:48:35

Input Set : A:\OXVIG1A.txt

Output Set: N:\CRF3\01242002\I983025.raw

| | | | | |
|-----|---|------|-----|-----|
| 263 | 545 | 550 | 555 | |
| 265 | acc tgt ggc ttc act cgc ttc cca ggg gct ccg ttc acc aac tac atg | 2421 | | |
| 266 | Thr Cys Gly Phe Thr Arg Phe Pro Gly Ala Pro Phe Thr Asn Tyr Met | | | |
| 267 | 560 | 565 | 570 | |
| 269 | agc tac acg gat gat aac tgc act gac aac ttc act cct aac caa gtg | 2469 | | |
| 270 | Ser Tyr Thr Asp Asp Asn Cys Thr Asp Asn Phe Thr Pro Asn Gln Val | | | |
| 271 | 575 | 580 | 585 | 590 |
| 273 | gcc cga atg cat tgc tat ttg gac cta gtc tat cag cag tgg act gaa | 2517 | | |
| 274 | Ala Arg Met His Cys Tyr Leu Asp Leu Val Tyr Gln Gln Trp Thr Glu | | | |
| 275 | 595 | 600 | 605 | |
| 277 | agc aga aag ccc acc ccc atc ccc att cca cct atg gtc atc gga cag | 2565 | | |
| 278 | Ser Arg Lys Pro Thr Pro Ile Pro Ile Pro Pro Met Val Ile Gly Gln | | | |
| 279 | 610 | 615 | 620 | |
| 281 | acc aac aag tcc ctc act atc cac tgg ctg cct cct att agt gga gtt | 2613 | | |
| 282 | Thr Asn Lys Ser Leu Thr Ile His Trp Leu Pro Pro Ile Ser Gly Val | | | |
| 283 | 625 | 630 | 635 | |
| 285 | gta tat gac agg gcc tca ggc agc ttg tgt ggc gct tgc act gaa gat | 2661 | | |
| 286 | Val Tyr Asp Arg Ala Ser Gly Ser Leu Cys Gly Ala Cys Thr Glu Asp | | | |
| 287 | 640 | 645 | 650 | |
| 289 | ggg acc ttt cgt cag tat gtg cac aca gct tcc tcc cgg cgg gtg tgt | 2709 | | |
| 290 | Gly Thr Phe Arg Gln Tyr Val His Thr Ala Ser Ser Arg Arg Val Cys | | | |
| 291 | 655 | 660 | 665 | 670 |
| 293 | gac tcc tca ggt tat tgg acc cca gag gag gct gtg ggg cct cct gat | 2757 | | |
| 294 | Asp Ser Ser Gly Tyr Trp Thr Pro Glu Glu Ala Val Gly Pro Pro Asp | | | |
| 295 | 675 | 680 | 685 | |
| 297 | gtg gat cag ccc tgc gag cca agc tta cag gcc tgg agc cct gag gtc | 2805 | | |
| 298 | Val Asp Gln Pro Cys Glu Pro Ser Leu Gln Ala Trp Ser Pro Glu Val | | | |
| 299 | 690 | 695 | 700 | |
| 301 | cac ctg tac cac atg aac atg acg gtc ccc tgc ccc aca gaa ggc tgt | 2853 | | |
| 302 | His Leu Tyr His Met Asn Met Thr Val Pro Cys Pro Thr Glu Gly Cys | | | |
| 303 | 705 | 710 | 715 | |
| 305 | agc ttg gag ctg ctc ttc caa cac ccg gtc caa gcc gac acc ctc acc | 2901 | | |
| 306 | Ser Leu Glu Leu Leu Phe Gln His Pro Val Gln Ala Asp Thr Leu Thr | | | |
| 307 | 720 | 725 | 730 | |
| 309 | ctg tgg gtc act tcc ttc ttc atg gag tcc tcg cag gtc ctc ttt gac | 2949 | | |
| 310 | Leu Trp Val Thr Ser Phe Phe Met Glu Ser Ser Gln Val Leu Phe Asp | | | |
| 311 | 735 | 740 | 745 | 750 |
| 313 | aca gag atc ttg ctg gaa aac aag gag tca gtg cac ctg ggc ccc tta | 2997 | | |
| 314 | Thr Glu Ile Leu Leu Glu Asn Lys Glu Ser Val His Leu Gly Pro Leu | | | |
| 315 | 755 | 760 | 765 | |
| 317 | gac act ttc tgt gac atc cca ctc acc atc aaa ctg cac gtg gat ggg | 3045 | | |
| 318 | Asp Thr Phe Cys Asp Ile Pro Leu Thr Ile Lys Leu His Val Asp Gly | | | |
| 319 | 770 | 775 | 780 | |
| 321 | aag gtg tcg ggg gtg aaa gtc tac acc ttt gat gag agg ata gag att | 3093 | | |
| 322 | Lys Val Ser Gly Val Lys Val Tyr Thr Phe Asp Glu Arg Ile Glu Ile | | | |
| 323 | 785 | 790 | 795 | |
| 325 | gat gca gca ctc ctg act tct cag ccc cac agt ccc ttg tgc tct ggc | 3141 | | |
| 326 | Asp Ala Ala Leu Leu Thr Ser Gln Pro His Ser Pro Leu Cys Ser Gly | | | |
| 327 | 800 | 805 | 810 | |

Use of n and/or Xaa has been detected in the Sequence Listing.
 Review the Sequence Listing to insure a corresponding
 explanation is presented in the <220> to <223> fields of
 each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/983,025

DATE: 01/24/2002

TIME: 14:48:36

Input Set : A:\OXVIG1A.txt

Output Set: N:\CRF3\01242002\I983025.raw

L:1155 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3

L:1425 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24